

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 97-086
NPDES PERMIT NO. CA0038130

WASTE DISCHARGE REQUIREMENTS

CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO
NORTH BAYSIDE SYSTEM UNIT
SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter the Board) finds that:

PURPOSE OF ORDER

1. The cities of South San Francisco and San Bruno (hereinafter called the cities), by application dated October 10, 1996, submitted a report of waste discharge for reissuance of waste discharge requirements and a permit to discharge wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).
2. This discharge is presently governed by Waste Discharge Requirement Order No. 92-034 which allows discharge into Lower San Francisco Bay.

DISCHARGE DESCRIPTION

3. The cities own and operate the South San Francisco and San Bruno Water Quality Control Plant, located in South San Francisco, San Mateo County. The current facility has an average dry weather flow capacity to provide secondary level treatment for 9.0 million gallons per day (mgd) of domestic, commercial, and industrial wastewater from the cities of South San Francisco and San Bruno, and portions of the City of Daly City and the Town of Colma. The average annual and dry weather flow for 1996 at the treatment plant was 9.7 and 8.5 mgd respectively. The cities' wastewater treatment plant will have design capacity of 13 mgd after documenting adequate reliability, capacity, and performance of the completed plant improvement projects.
4. The cities are members of the North Bayside System Unit (NBSU), which is the Joint Powers Authority responsible for operation of certain shared transport and disposal facilities. The NBSU includes the cities of Millbrae, Burlingame, South San Francisco and San Bruno, and San Francisco International Airport. The joint effluent is dechlorinated before discharge into San Francisco Bay. The South San Francisco and San Bruno Water Quality Control plant contributes about 54% of NBSU flow.

5. The treatment facility consists of bar screens, grit chambers, vacuators, aeration tanks, final clarifiers and disinfection equipment. Sludge is thickened and anaerobically digested. Final disposal of sludge is by composting with rice hulls and sawdust to make a soil conditioner.

The treated wastewater discharges from the NBSU force main and outfall into lower San Francisco Bay, a water of the State and United States, northeast of Point San Bruno through a submerged diffuser about 5300 feet offshore at depth of 20 feet below mean lower low water (Latitude 37 deg., 39 min., 55 sec.; Longitude 122 deg., 21 min., 41 Sec.). The cities of South San Francisco and San Bruno and NBSU are hereinafter called the dischargers.

APPLICABLE PLANS, POLICIES AND REGULATIONS

6. The Board adopted a revised Water Quality Control Plan for the San Francisco Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board (State Board) and the Office Administrative Law on July 20 and November 13, respectively of 1995. A summary of regulatory provisions is contained in Title 23 of the California Code of Regulations at section 3912. The Basin Plan identifies beneficial uses and water quality objectives for waters of the State, including surface and ground waters, as well as effluent limitations and discharge prohibitions intended to protect beneficial uses.
7. Effluent limitations in this permit are based on the plans, policies, and water quality criteria of the Basin Plan, *Quality Criteria for Water* (EPA/5-86-001, 1986; Gold Book), National Toxics Rule (57 FR 60848, 22 December 1992; NTR), applicable Federal Regulations (40 CFR Parts 122 and 131), and Best Professional Judgment. The accompanying Fact Sheet contains detailed justification for the individual constituents.
8. The effluent limit for copper in this permit is based on 4.9 µg/l copper as an interpretation of the narrative toxicity objective in the Basin Plan, based on best professional judgment. From a technical standpoint, 4.9 µg/l copper is currently the best available criterion that is protective of the most sensitive designated use of San Francisco Bay waters with respect to copper: habitat for aquatic organisms. The criterion is based on the Regional Board's study to develop a site-specific objective for copper, which employed the "water effect ratio" approach developed by the EPA. This study and associated staff analysis are described in a September 25, 1992 staff report entitled "Revised Report on Proposed Amendment to Establish a Site Specific Objective for Copper for San Francisco Bay".

BENEFICIAL USES

9. The beneficial uses of the lower San Francisco Bay and contiguous water bodies are:

- Industrial Service Supply
- Navigation
- Water Contact Recreation
- Non-contact Water Recreation
- Ocean Commercial and Sport Fishing
- Wildlife Habitat
- Preservation of Rare and Endangered Species
- Fish Migration
- Fish Spawning
- Shellfish Harvesting
- Estuarine Habitat

WET WEATHER OVERFLOWS

10. The cities' wastewater treatment plant was originally built in the early 1950s and was upgraded in 1963, early 1970s, and early 1990s. Many of the units are old and worn. The plant's original design capacity of 13 mgd was based on producing an effluent to meet advanced primary not secondary requirements. From 1991 through 1993 the plant underwent modifications to improve the performance and reliability of the treatment units as required by the Cease and Desist Order (No. 90-001). These modifications were not intended to increase the capacity of the plant.

11. The cities' treatment plant and associated facilities continue to operate beyond normal capacity. During the rainy season, the plant receives high flows from groundwater infiltration and stormwater inflow (I/I). The effects of I/I, high loads, and occasional load spikes by industries are exaggerated by major deficiency in the treatment facilities. Several discharge violations have occurred each year since 1993. A Capacity Study Report was prepared in October 1995 which included an evaluation of the cities' existing wastewater treatment facilities, an estimate of the current average dry weather treatment capacity and future capacity requirements, and recommended improvements to increase treatment capacity and to improve treatment reliability.

The cities have proposed plant improvement projects to a) further improve treatment reliability of meeting discharge requirements, b) to increase dry weather treatment capacity from 9 mgd to 13 mgd to accommodate future growth, and c) to increase wet weather capacity from 35 mgd to 62 mgd. A Facility Plan was prepared in March 1997 which is a compilation of the capacity study, and the technical memorandums on evaluations of plant

expansion alternatives, master plan for future requirements, financing plan, and management of wet weather flows.

12. The Cities' wastewater collection system and the treatment plant receives high flows during the rainy season. The high flows are a result of stormwater inflow and/or groundwater infiltration (I/I) of rain water in the sewer collection system from leaky pipes and direct cross-connection between storm drains and the sewer system. The sewer collection system currently has insufficient capacity to handle peak wet weather flows. During heavy storms, the collection system becomes surcharged and untreated, storm-water diluted sewage may overflow at various locations and eventually drain to Colma Creek via the storm drainage system.

The existing outfall force main and effluent pump station at the treatment plant has a limited firm hydraulic capacity of about 40 mgd. During heavy rains, the effluent flow rates from the treatment plant exceed the outfall and effluent pump capacity and treated effluent may discharge into Colma Creek approximately six times each year.

13. The Capacity Study Report also recommended implementation of an I/I reduction program to reduce flows and surcharges in the sewer collection system during rainy season. Both cities have begun studies to estimate the I/I flows and to develop a plan to control I/I. Preliminary results from the studies will be available in the fall of 1997. Further studies are necessary to obtain additional flow data for the next rainy season. These studies are expected to be completed in the summer of 1998. Flow data collected during these studies will be used for a computer model to be developed to identify flow restrictions and to develop a collection system improvement program for both cities. The I/I studies will also recommend a sewer system operation plan to optimize the sewer collection system and to reduce peak hourly flows to the wastewater treatment plant. Additional sewer system evaluation work will be performed if severe I/I in localized areas is found.
14. When the I/I correction/sewer improvement program is completed, more flows will be conveyed to the plant. Conservative estimates indicate that peak hourly wet weather flow (PHWWF) to the plant could rise up to 62 mgd for a 5-year storm. The existing outfall force main and effluent pump station at the treatment plant have a limited hydraulic capacity. Flow data collected during I/I studies will be used to perform wet weather effluent disposal study. The study will a) evaluate alternatives to manage effluent disposal during peak wet weather flows and b) recommend flow management approach to control effluent flows for different design storms of 2, 3, 5, and 10 year return frequencies. A cost effective analysis will be performed for each alternative.
15. Design of plant upgrades and improvements began in December 1996 and is scheduled to be completed by March 1, 1998. The construction is scheduled to be completed by March 1, 2001. The proposed improvements include addition of primary clarifiers, replacement of

the circular chlorine contact tank with two rectangular tanks and, improvements to the secondary clarifiers.

16. When the plant improvements are completed, the plant will provide full secondary treatment for up to 30 mgd while remaining flows of up to 32 mgd will receive primary treatment for a total treatment capacity of 62 mgd. For flows above 30 mgd, primary and secondary effluent will be combined and disinfected prior to discharge through the outfall. The blended discharges are expected to meet the effluent limitations. The construction cost for the plant improvements is estimated to be \$35 million. When plant flows, combined with the other NBSU discharges, exceed the hydraulic capacity of the outfall force main and effluent pump station, the effluent flows will be routed so that only secondary effluent is discharged to Colma Creek.

OTHER FINDINGS

17. The cities have implemented and are maintaining a U.S. Environmental Protection Agency (USEPA) approved pretreatment program in accordance with Federal pretreatment regulations (40 CFR 403) and this Board's Order No. 89-179.
18. USEPA and the Board have classified this discharge as a major discharge.
19. The dischargers are hereby notified that on February 19, 1993, USEPA issued the final rule for the use and disposal of sewage sludge (40 CFR 503). This rule requires that producers of sewage sludge meet certain reporting, handling, and disposal requirements. The dischargers are advised to contact USEPA regarding compliance with 40 CFR 503.
20. An **Operations and Maintenance Manual** is maintained by the dischargers for purposes of providing plant and regulatory personnel with a source of information describing all equipment, recommended operation strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, the manual shall be kept updated to reflect significant changes in treatment facility equipment and operation practices.

CEQA AND PUBLIC NOTICE OF ACTION

21. This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21000) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code.

22. The dischargers and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations.
23. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the dischargers shall comply with the following:

A. Discharge Prohibitions

1. Discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1 is prohibited.
2. Bypass or overflow of untreated or partially treated wastewater to waters of the State either at the treatment plant or from any of the collection or transport system or pump stations tributary to the treatment plant or outfall is prohibited.
3. The average dry weather flow shall not exceed 13 mgd. Average shall be determined over three consecutive dry weather months each year.

B. Effluent Limitations

1. Effluent (Waste E-001) discharged into the combined outfall shall not exceed the following limits:

	Constituents	Units	Monthly Average	Weekly Average	Maximum Daily	Instantaneous Maximum
a.	Settleable Matter	ml/l-hr	0.1	---	0.2	---
b.	Biochemical Oxygen Demand (BOD ₅)	mg/l	30	45	---	---
c.	Total Suspended Solids	mg/l	30	45	---	---
d.	Total Chlorine Residual ⁽¹⁾	mg/l	---	---	---	0.0

(1) Requirement defined as below the limit of detection in standard test methods. Compliance with this effluent limitation may be demonstrated at the NBSU outfall.

2. pH: the pH of the discharge shall not exceed 9.0 nor be less than 6.0.

3. Total Coliform Bacteria:

The treated wastewater, at some place in the treatment process prior to discharge, shall meet the following limits of bacteriological quality: The moving median value for the Most Probable Number (MPN) of total coliform bacteria in any five (5) consecutive samples shall not exceed 240 MPN/100 ml; and, any single sample shall not exceed 2,400 MPN/100 ml.

4. 85 Percent Removal, BOD and TSS:

The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and total suspended solids values, by weight, for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period (85 percent removal).

5. Acute Toxicity:

The survival of organisms in undiluted effluent shall be an eleven (11) sample median value of not less than 90 percent survival, and an eleven (11) sample 90 percentile value of not less than 70 percent survival. The eleven sample median and 90th percentile effluent limitations are defined as follows:

11 sample median:	A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten or less bioassay tests show less than 90 percent survival.
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90th percentile:	A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit, if one or more of the past ten or less bioassay tests show less than 70 percent survival.
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If the dischargers demonstrates to the satisfaction of the Executive Officer that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge is not adversely impacting receiving water quality or beneficial uses, then such toxicity does not constitute a violation of this effluent limitation. In the event that ammonia in the effluent consistently causes toxicity, the Board may consider modifying or granting an exception to this effluent limitation if the dischargers demonstrates that ammonia in the effluent is not impacting receiving water quality or beneficial uses. Anti-backsliding will not apply to such a modification because the current limit does not apply to ammonia toxicity that fits this exception criteria.

6. Chronic Toxicity

The discharger shall comply with the following tiered requirements for accelerated monitoring and toxicity reduction evaluations (TRE):

- a. routine monitoring in accordance with Self-Monitoring Program;
- b. accelerate monitoring after exceeding a single sample maximum of 10 TUC⁽¹⁾ ;
- c. return to the routine monitoring if accelerated monitoring does not exceed the “trigger” in “b”;
- d. submit a TRE workplan acceptable to the Executive Officer and continue accelerated monitoring if monitoring confirms consistent toxicity above “trigger” in “b”;
- e. return to routine monitoring after appropriate elements of TRE workplan are implemented and toxicity drops below “trigger” levels in “b”, or as directed by the Executive Officer.

⁽¹⁾ A TUC equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC₂₅, EC₂₅, or NOEC values. These terms, their usage, and other chronic toxicity monitoring program requirements are defined in more detail in the Self-Monitoring Program of this Order. Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge.

7. The discharge of effluent containing constituents in excess of the following concentration limits is prohibited^(a,1):

Table 1 (All limits in µg/l)

<u>Constituent</u>	<u>Monthly Average</u> ^(b)	<u>Daily Average</u> ^(b)
1. Arsenic	---	20
2. Cadmium	---	30
3. Chromium (VI) ^(c)	---	110
4. Copper	---	37
5. Lead ^(g)	---	53
6. Mercury	0.21	1
7. Nickel ^(g)	---	65
8. Selenium ^(g)	---	50
9. Silver	---	23
10. Zinc ^(g)	---	500
11. Cyanide ^(c)	---	10

<u>Constituent</u>	<u>Monthly Average^(b)</u>	<u>Daily Average^(b)</u>
12. PAHs ^(d)	0.31	150
13. Phenol	300	---

Footnotes:

- a. These limits are based on marine water quality objectives, and are intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.
- b. Limits apply to the average concentration of all samples collected during the averaging period (Daily - 24-hour period; Monthly - Calendar month).
- c. The dischargers may meet this limit as total chromium.
- d. PAHs (polynuclear aromatic hydrocarbons) shall mean the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[a,h]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene, and pyrene.
- e. The dischargers may demonstrate compliance with this limitation by measurement of weak acid dissociable cyanide.
- f. All analyses shall be performed using current USEPA Methods, as specified in 40 CFR 136 (40 CFR 122.44(i)).
- g. Effluent limitation may be met as a 4-day average. If compliance is to be determined based on a 4-day average, then concentrations of four 24-hour composite samples shall be reported, as well as the average of four.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. Bottom deposits or aquatic growths;
 - c. Alternation of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum or origin;
 - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or water fowl, or

which render any of these unfit for human consumption wither at levels created in the receiving waters or as result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

- a. Dissolved Oxygen 5.0 mg/l minimum.

Median of any three consecutive months shall not be less than 80% saturation. When natural factors cause lesser concentrations than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.

- b. Dissolved Sulfide 0.1 mg/l maximum.

- c. pH Variation from natural ambient pH by more than 0.5 pH units.

- d. Un-ionized Ammonia 0.025 mg/l as N Annual Median
0.16 mg/l as N Maximum

3. The discharge shall not cause a violation of any applicable water quality standard for receiving water adopted by the Board or the State Water Resource Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Provisions:

1. Requirements prescribed by this Order supersede the requirements prescribed by Order No. 92-034. Order No. 92-034 is hereby rescinded.
2. Where concentration limitations in mg/l or µg/l are contained in this Permit, the following Mass Emission Limitations shall also apply:

(Mass Emission Limit in kg/day) = (Concentration Limit in mg/l) x (Actual Flow in million gallons per day averaged over the time interval to which the limit applies) x 3.785 (conversion factor).

3. The dischargers shall comply with all sections of this Order immediately upon adoption.
4. As new water quality objectives go into effect for San Francisco Bay (whether statewide, regional or site-specific), the effluent limitations in this permit will be modified as necessary to reflect the objectives. Adoption of the effluent limitations contained in this permit is not intended to restrict in any way future modification based on legally adopted water quality objectives.
5. Compliance with Acute Toxicity Effluent Limitation
 - a. Compliance with the effluent limitation for acute toxicity shall be evaluated by measuring survival of test species exposed to undiluted effluent for 96 hours in flow-through bioassays. Two fish species will be tested concurrently. Each fish species represents a single bioassay.
 - b. The two compliance species shall be as specified by the Executive Officer. The dischargers shall conduct a minimum of one screening of three species: three-spine stickleback, rainbow trout, and fathead minnow. All tests in a single screening must be completed within ten days of each other. The three species screening requirement can be met using either flow-through or static renewal bioassays. The dischargers shall submit screening test data acceptable to the Executive Officer, within 6 months after adoption of this Order.
 - c. The Executive Officer may consider allowing compliance monitoring with only one fish species (the most sensitive of two), if the dischargers can document that the acute toxicity limitation, specified above, has not been exceeded during the previous three years, or that acute toxicity has been observed in only one of two species.
 - d. All bioassays shall be performed according to protocols approved by the USEPA or State Board, or published by the American Society for Testing and Materials (ASTM) or American Public Health Association.
6. Toxicity Reduction Evaluation (TRE) for Chronic Toxicity

If there is a consistent exceedence of either of the chronic toxicity monitoring triggers, the discharger shall implement a tiered chronic toxicity reduction evaluation (TRE), in accordance with a TRE workplan acceptable to the Executive Officer. The TRE shall be initiated within 15 days of the date of violation. TREs need to be site specific but should follow EPA guidance and be conducted in a step-wise fashion. Tier 1 includes basic data collection, followed by Tier 2 which evaluates optimization of the treatment

system operation, facility housekeeping, and selection and use of in-plant process chemicals.

If unsuccessful in eliminating toxicity, Tier 3, a TIE should be initiated and all reasonable efforts currently available TIE methodologies employed. Assuming successful identification or characterization of the toxicant(s), Tier 4 is to evaluate final effluent treatment options and Tier 5 is to evaluate within plant treatment options. Tier 6 consists of the follow-up and confirmation once the toxicity control method has been selected and implemented.

Many recommended TRE elements parallel source control, pollution prevention, and stormwater control program best management practices (BMPs). To prevent duplication of effort, evidence of complying with those requirements may be sufficient to comply with TRE requirements. By requiring the first steps of a TRE to be accelerated testing and review of the facility's TRE workplan, a TRE may be ended in its early stages provided there is no longer any toxicity.

7. Screening Phase Chronic Toxicity

The discharger shall conduct screening phase monitoring under either of these two conditions described in Attachment B of this Order. The discharger shall conduct screening phase compliance monitoring in accordance with a proposal acceptance to the Executive Officer. The proposal shall contain, at a minimum, the elements specified in Attachment B of this Order. The purpose of the screening is to determine the most sensitive test species for subsequent routine compliance monitoring for chronic toxicity. The screening phase monitoring shall be conducted according to the following schedule:

<u>Task</u>	<u>Deadline</u>
a. Submit Study Plan	October 1, 1997
b. Initiate Study	December 1, 1997
c. Submit Final Report	August 1, 1997

8. Pollution Prevention Program

- a. The cities shall continue to participate in the Pollution Prevention Program (previously known as the Waste Minimization Program) as described in the Basin Plan, Chapter IV, Waste Minimization Section.
- b. The cities shall continue to implement and expand its existing Pollution Prevention Program in order to reduce the pollutant loadings to the treatment plant and,

subsequently, to the receiving waters. The dischargers shall focus on constituents found to be in non-compliance with the effluent limits.

- c. The cities shall continue to submit annual reports by July 15th and progress reports by February 28th of each year that are acceptable to the Executive Officer. The reports should include (1) documentation of its efforts and progress, (2) evaluation of the program's accomplishments, and (3) identify specific tasks and establish time schedules for future efforts. Duplicate copies of the reports shall be provided: one to the NPDES Permit Case Handler and one to the Pollution Prevention Coordinator.
 - d. The cities shall complete implementation of the source reduction plan in order to reduce pollutant loading to the maximum extent practicable.
9. If the cities choose to pursue a capacity increase for the treatment plant, information that must be submitted prior to Board consideration of a flow increase must include, but may not be limited to, the following:
- a. Engineering reports documenting adequate reliability, capacity and performance of the completed improvements to the treatment facility;
 - b. Documentation that increased discharges (evaluation must include assessment of wet weather flows) will not result in degradation of receiving waters, or adverse impacts on beneficial uses of receiving waters, in accordance with State and Federal regulations;
 - c. Plans for including reuse of the treated effluent as an integral part of the wastewater management plan; and
 - d. Documentation of compliance with the CEQA.
10. The dischargers shall implement and enforce their approved pretreatment programs in accordance with Board Order 89-179 and its amendments thereafter. The dischargers' responsibilities include, but are not limited to:
- a. Enforcement of National Pretreatment Standards (e.g. prohibited discharges, Categorical Standards, local limits) in accordance with 40 CFR 403.5 and Section 307(b) and (c) of the Clean Water Act.
 - b. Implementation of the pretreatment program in accordance with legal authorities, policies, procedures, and financial provisions described in the General Pretreatment regulations (40 CFR 403) and its approved pretreatment program.
 - c. Submission of annual and quarterly reports to USEPA and the State as described in Board Order 95-015, and its amendments thereafter.

11. The dischargers shall review their Operations and Maintenance Manual, annually, or within 90 days of completion of any significant facility or process changes, and update as necessary. The dischargers shall submit to the Board, by April 15 of each year, a letter describing the results of the review process including an estimated time schedule for completion of any revisions determined necessary, and a description or copy of any completed revisions.
12. Annually, the dischargers shall review and update as necessary, their Contingency Plan as required by Board Resolution 74-10. The discharge of pollutants in violation of this Order where the dischargers has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code. Plan revisions, or a letter stating that no changes are needed, shall be submitted to the Board by April 15 of each year.
13. The dischargers shall implement a program to regularly review and evaluate their wastewater collection, treatment and disposal facilities in order to ensure that all capital facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the discharger's service responsibilities. A Capital Facilities Management Program summary report discussing the status of this evaluation program, including any recommended or planned actions, shall be submitted to the Board by June 30 of each year.
14. The dischargers shall comply with the Self-Monitoring Program for this order, as adopted by the Board and as may be amended by the Executive Officer. The Self-Monitoring Program may be amended by the Executive Officer pursuant to USEPA regulations 40 CFR 122.62, 122.63, and 124.5.
15. Regional Monitoring Program

In accordance with the Board Resolution No. 92-043, the Executive Officer on October 20, 1992, amended the dischargers' monitoring requirements and suspended the receiving water monitoring requirements and several other requirements for the duration of the Board's Regional Monitoring Program (RMP). This suspension shall remain in effect for the duration of the RMP or until revoked by the Executive Officer.

16. The dischargers shall comply with all applicable items of the attached "Standard Provisions and Reporting Requirements " dated August 1993, or any amendments thereafter.

17. The Board may modify, or revoke and reissue, this Order and Permit if present or future investigations demonstrate that the discharge(s) governed by this Order are causing or significantly contributing to adverse impacts on water quality and/or beneficial uses of the receiving waters.
18. This Order expires on July 16, 2002. The dischargers must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days before this expiration date as application for reissuance of waste discharge requirements.
19. This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after the date of its adoption provided the Regional Administrator, EPA, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on July 16, 1997.


LORETTA K. BARSAMIAN
Executive Officer

Attachments:

Attachment A - Definition of NOEL
Attachment B - Chronic Toxicity Screening Phase Monitoring Requirements
Figure 1 - Facility Map
Self-Monitoring Program
Standard Provisions and Reporting Requirements - August 1993
Resolution No. 74-10

ATTACHMENT A

DEFINITION OF
NO OBSERVED EFFECT LEVEL

No observed effect level (NOEL) for compliance determination is equal to IC_{25} or EC_{25} . If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.

Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25% of the test organisms.

Inhibition Concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal, non-quantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25% reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as EPA's Bootstrap Procedure.

No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

ATTACHMENT B

SCREENING PHASE MONITORING REQUIREMENTS

- A. Screening phase compliance monitoring is required:
1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to pretreatment, source control, and waste minimization efforts; or
 2. Prior to Permit reissuance. Screening phase monitoring data shall be included in the NPDES Permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.
- B. Design of the screening phase shall, at a minimum, consist of the following elements:
- Use of test species specified in Table B-1 and B-2 (attached), and use of the protocols referenced in those tables, or as approved by the Executive Officer;
 - Two stages:

Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Table B-3 (attached); and

Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.
 - Appropriate controls; and
 - Concurrent reference toxicant tests.
- C. The discharger shall submit a screening phase proposal to the Executive Officer for approval. The proposal shall address each of the elements listed above.

TABLE B-1
CRITICAL LIFE STAGE TOXICITY TESTS FOR ESTUARINE WATERS

SPECIES	EFFECT	TEST DURATION	REFERENCE
alga (<i>Skeletonema costatum</i>) (<i>Thalassiosira pseudonana</i>)	growth rate	4 days	1
red alga (<i>Champia parvula</i>)	number of cystocarps	7-9 days	5
giant kelp (<i>Macrocystis pyrifera</i>)	percent germination; germ tube length	48 hours	3
abalone (<i>Haliotis rufescens</i>)	abnormal shell development	48 hours	3
oyster (<i>Crassostrea gigas</i>) mussel (<i>Mytilus edulis</i>)	abnormal shell development; percent survival	48 hours	2
Echinoderms (urchins - <i>Strongylocentrotus</i> <i>purpuratus</i> , <i>S. franciscanus</i>); (sand dollar - <i>Dendraster</i> <i>excentricus</i>)	percent fertilization	1 hour	4
shrimp (<i>Mysidopsis bahia</i>)	percent survival; growth; fecundity	7 days	5
silversides (<i>Menidia beryllina</i>)	larval growth rate; percent survival	7 days	5

TOXICITY TEST REFERENCES

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for conducting static 96-hour toxicity tests with microalgae. Procedure E 1218-90. ASTM, Philadelphia, PA.
2. American Society for Testing Materials (ASTM). 1989. Standard Practice for conducting static acute toxicity tests with larvae of four species of bivalve molluscs. Procedure E 724-89. ASTM, Philadelphia, PA.
3. Anderson, B.B. J.W. Hunt, S.L. Turpen, A.R. Coulon, M. Martin, D.L. McKeown, and F.H. Palmer. 1990. Procedures manual for conducting toxicity tests developed by the marine bioassay project. California State Water Resources Control Board, Sacramento.
4. Dinnel, P.J., J. Link, and Q. Stober. 1987. Improved methodology for sea urchin sperm cell bioassay for marine waters. Archives of Environmental Contamination and Toxicology 16:23-32. and S.L. Anderson. September 1, 1989. Technical Memorandum. San Francisco Bay Regional Water Quality Control Board, Oakland, CA.
5. Weber, C.I., W.B. Horning, II, D.J. Klem, T.W. Neihsel, P.A. Lewis, E.L. Robinson, J. Menkedick, and F. Kessler (eds.). 1988. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to marine and estuarine organisms. EPA-600/4-87/028. National Technical Information Service, Springfield, VA.

TABLE B-2
CRITICAL LIFE STAGE TOXICITY TESTS FOR FRESH WATERS

SPECIES	EFFECT	TEST DURATION	REFERENCE
fathead minnow (<u>Pimephales promelas</u>)	survival; growth rate	7 days	6
water flea (<u>Ceriodaphnia dubia</u>)	survival; number of young	7 days	6
alga (<u>Selenastrum capricornutum</u>)	cell division rate	4 days	6

TOXICITY TEST REFERENCE

6. Horning, W.B. and C.I. Weber (eds.). 1989. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms. Second edition. U.S. EPA Environmental Monitoring Systems Laboratory, Cincinnati, Ohio. EPA/600/4-89/001.

TABLE B-3
TOXICITY TEST REQUIREMENTS FOR STAGE ONE SCREENING PHASE

REQUIREMENTS	RECEIVING WATER CHARACTERISTICS		
	DISCHARGES TO COAST	DISCHARGES TO SAN FRANCISCO BAY†	
	Ocean	Marine	Freshwater
Taxonomic Diversity	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type			
Freshwater†	0	1 or 2	3
Marine	4	3 or 4	0
Total number of tests	4	5	3

† The fresh water species may be substituted with marine species if:

- 1) the salinity of the effluent is above 5 parts per thousand (ppt) greater than 75% of the time, or
- 2) the ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

‡ Marine refers to receiving water salinities greater than 5 ppt at least 75% of the time during a normal water year. Fresh refers to receiving water with salinities less than 5 ppt at least 75% of the time during a normal water year.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO
NORTH BAYSIDE SYSTEM UNIT
SAN MATEO COUNTY

NPDES PERMIT NO. CA0038130
ORDER NO. 97-086

CONSISTS OF:
PART A, dated August 1993
AND
PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS AND SCHEDULE OF SAMPLING, ANALYSES, AND OBSERVATIONS

A. INFLUENT AND INTAKE

<u>Station</u>	<u>Description</u>
A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present, preceding any phase of treatment, and exclusive of any return flows or process sidestreams.

B. EFFLUENT

<u>Station</u>	<u>Description</u>
E-001	At any point in the plant after disinfection between the point of discharge into the combined outfall and the point at which all waste from the treatment plant is present.
E-002	At any point in the combined outfall after dechlorination between the point of discharge into San Francisco Bay and the point at which all waste tributary to that combined outfall is present.

C. RECEIVING WATERS

<u>Station</u>	<u>Description</u>
C-1	At a point in San Francisco Bay located over the geometric center of the outfit's discharge ports.
C-2	At a point in San Francisco Bay located midway between C-1 and C-3.
C-3	At a point in San Francisco Bay located in the center of the waste plume.
C-50-SW	At a point in San Francisco Bay, located 50 feet southwesterly, along the outfall line shoreward from Station C-1.

C-50-NW	At a point in San Francisco Bay, located 50 feet northwesterly from Station C-1, normal to the outfall line.
C-50-NE	At a point in San Francisco Bay, located 50 feet northeasterly from Station C-1, along the outfall line extended.
C-50-SE	At a point in San Francisco Bay, located 50 feet southwesterly from station C-1, normal to the outfall line.
C-300-N through C-300-NW (8 stations)	At a point in San Francisco Bay located on a 300 foot radius from the geometric center of the outfall diffuser, at equidistant intervals, with Station C-300-SW located shoreward from Station C01 at the outfall line.
C-R-NW	At a point in San Francisco Bay located approximately 1500 feet northerly from the point of discharge.
C-R-SE	At a point in San Francisco Bay, located approximately 1500 feet southeasterly from the point of discharge.

D. LAND OBSERVATIONS

<u>Station</u>	<u>Description</u>
P-1 through P-'n'	Located along the periphery of the waste treatment or disposal facilities, at equidistant intervals, not to exceed 100 feet. (A sketch showing the locations of these stations will accompany each report.

E. OVERFLOWS AND BYPASSES

<u>Station</u>	<u>Description</u>
OV-1 through OV-'n'	Bypass or overflows from manholes, pump stations, wastewater treatment plant, or collection systems.

II. CHRONIC TOXICITY MONITORING REQUIREMENT

- A. Test Species and Frequency: The discharger shall collect a 24-hour composite sample of the treatment plant effluent at the station E-1, for critical life stage toxicity testing in accordance with the attached Table 1. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required. The test organisms shall be determined by the Executive Officer.

- B. Methodology: Sample collection, handling and preservation shall be in accordance with EPA protocols. The test methodology used shall be in accordance with the references cited in Order No. 92-104, or as approved by the Executive Officer. A concurrent reference toxicant test shall be performed for each test.
- C. Dilution Series: The discharger shall conduct tests at 100%, 75%, 50%, 25%, and 12.5%. The "%" represents percent effluent as discharged.

III. CHRONIC TOXICITY REPORTING REQUIREMENTS

- A. Routine Reporting: Toxicity test results for the current reporting period shall include at a minimum, for each test
1. sample date(s)
 2. test initiation date
 3. test species
 4. end point values for each dilution (e.g. number of young, growth rate, percent survival)
 5. NOEC value(s) in percent effluent
 6. IC₁₅, IC₂₅, IC₄₀, and IC₅₀ values (or EC₁₅, EC₂₅ ... etc.) in percent effluent
 7. TUC values (100/NOEC, 100/IC₂₅, and 100/EC₂₅)
 8. Mean percent mortality (\pm s.d.) after 96 hours in 100% effluent (if applicable)
 9. NOEC and LOEC values for reference toxicant test(s)
 10. IC₅₀ or EC₅₀ value(s) for reference toxicant test(s)
 11. Available water quality measurements for each test (e.g. pH, D.O, temperature, conductivity, hardness, salinity, ammonia)
- B. Compliance Summary: Each self-monitoring report shall include a summary table of chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include the items listed above under Section A item numbers 1, 3, 5, 6(IC₂₅ or EC₂₅), 7, and 8.
- C. Reporting Raw Data in Electronic Format: On a quarterly basis, by February 15, May 15, August 15, and December 15 of each year, the discharger shall report all chronic toxicity data for the previous calendar quarter in the format specified in "Suggested Standardized Reporting Requirements for Monitoring Chronic Toxicity," August 1993, SWRCB. The data shall be submitted in high density 3.5-inch floppy diskettes.

IV. SCHEDULE OF SAMPLING, ANALYSIS AND OBSERVATIONS

The schedule of sampling, analysis and observation shall be that given in Table 1.

V. REPORTING REQUIREMENTS

1. General Reporting Requirements are described in Section C of this Board's "Standard Provisions and Reporting Requirements", dated August 1993.
2. Self-Monitoring Reports for each calendar month shall be submitted monthly, by the 22nd day of the following month. The required contents of these reports are described in Section F.4. of Part A.
3. An Annual Report for each calendar year shall be submitted to the Board by February 15th of the following year. The required contents of the annual report are described in Section G.5. of Part A.
4. Any overflow, bypass or significant non-compliance incident that may endanger health or the environment shall be reported according to the Sections F.1 and F.2 of Part A.

I, Loretta K. Barsamian, Executive Officer, hereby certify that this Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 97-086.
2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be authorized by the Executive Officer.
3. Is effective on July 16, 1997.


LORETTA K. BARSAMIAN
Executive Officer

Attachment:

Table 1 and Footnotes
Part A, August 1993

TABLE 1 ^(1,7,12)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS
CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO
ORDER NO. 97-086

SAMPLING STATION	A-1	E-1			E-2			ALL C Sta. ⁽¹⁷⁾	All P Sta.
TYPE OF SAMPLE	C-24	G ⁴	C-24	Cont.	G ⁴	C-24	Cont.	G ^{4,10}	O
Flow Rate (mgd)	D			Cont.			Cont.		
BOD, 5-day, 20°C ⁽³⁾ (mg/l & Kg/day)	3/W		5/W						
Chlorine Residual & Dosage (mg/l & Kg/day) ⁽¹⁰⁾		2H or continuous			2H or continuous				
Settleable Matter ⁽³⁾ (ml/l-hr. & cu. ft./day)		D							
Total Suspended Matter (mg/l & Kg/day)	3/W		D						
Total Coliform (MPN/100 ml)		3/W						M ¹³	
Acute Fish Toxicity, 96-hr. (% survival) ⁽⁵⁾⁽⁶⁾			M						
Chronic Toxicity ⁽¹⁸⁾			(18)						
Oil & Grease (mg/l & Kg/day)	2/M ²	2/M ²							
Ammonia Nitrogen (mg/l & Kg/day)			M ⁹						
Nitrate Nitrogen (mg/l & Kg/day)									
Nitrite Nitrogen (mg/l & Kg/day)									
Un-ionized Ammonia (mg/l)								M ⁹	
Turbidity (NTU)			D					M	
pH (Units)		D						M	
Dissolved Oxygen (mg/l & % Saturation)		D						M	
Temperature (°C)		D						M	
Secchi Disc								M	
Sulfides (if DO < 5.0 mg/l) Total & Dissolved (mg/l)		D						M	

TABLE 1 (Continued)

SAMPLING STATION	A-1	E-1			E-2			ALL C Sta. ⁽¹⁷⁾	All P Sta.
TYPE OF SAMPLE	C-24	G ⁴	C-24	Cont.	G ⁴	C-24	Cont.	G ^{4,10}	O
Arsenic (µg/l & Kg/day)			M						
Cadmium (µg/l & Kg/day)			M						
Chromium (µg/l & Kg/day)			M						
Copper (µg/l & Kg/day)			M						
Cyanide (µg/l & Kg/day)		M							
Lead (µg/l & Kg/day)			M						
Mercury (µg/l & Kg/day)			M						
Nickel (µg/l & Kg/day)			M						
Selenium (µg/l & Kg/day)			M						
Silver (µg/l & Kg/day)			M						
Zinc (µg/l & Kg/day)			M						
PAHs (µg/l & Kg/day)		M							
Phenol (µg/l & Kg/day)		M							
Constituents in Table2 ⁽¹⁴⁾ (µg/l & Kg/day)		2/Y							
EPA 608 ⁽¹⁵⁾		2/Y							
EPA 624 ⁽¹⁵⁾		2/Y							
EPA 625 ⁽¹⁵⁾		2/Y							
EPA 1613 ⁽¹⁶⁾		2/Y							
All applicable Standard Observations		D			D			M	E

LEGEND

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample (24-hour)
Cont. = continuous sampling
O = observation

TYPES OF STATIONS

E = waste effluent stations
C = receiving water stations
L = basin and/or pond levee stations
P = treatment facilities perimeter stations

FREQUENCY OF SAMPLING

E = each occurrence	2/H = twice per hour	2H = every 2 hours
H = once each hour	2/W = 2 days per week	2D = every two days
D = once each day	5/W = 5 days per week	2W = every two weeks
W = once each week	2/M = 2 days per month	2M = every two months
M = once each month	2/Y = twice per year	Cont. = continuous
Y = once each year	Q = quarterly, once each in Mar., June, Sept., & Dec.	

NOTES FOR TABLE 1:

- (1) During any day when bypassing occurs from any treatment unit(s) in the plant or to the emergency outfall, the monitoring program for the effluent and any nearshore discharge shall include the following in addition to the above schedule for sampling, measurement and analysis:
 - a. Composite sample for BOD and Total Suspended Solids.
 - b. Grab samples for Total Coliform, Settleable Matter, and Oil and Grease.
 - c. Continuous monitoring of flow.
 - d. Continuous or every two hour monitoring of chlorine residual.
- (2) Oil and Grease sampling shall consist of 3 grab samples taken at 8-hour intervals during the sampling day with each grab collected in a glass container and analyzed separately. Results for Stations A-001 and E-001 shall be expressed as a weighted average of 3 values, based upon the instantaneous flow rates occurring at the time of each grab sample. If the plant is not staffed 24 hours per day or if the discharge does not occur continuously, then the grab samples may be taken at approximately equal intervals during the period that the plant is staffed or during the period that the plant is discharging.
- (3) Percent removal (effluent vs. influent) shall also be reported.
- (4) Grab samples shall be taken on day(s) of composite sampling.
- (5) Compliance with the acute toxicity limitations shall be determined using two test species in parallel flow-through bioassays. One shall be three-spine stickleback, and the other shall be either rainbow trout or fathead minnow. The sample may be taken from E-001 prior to disinfection instead of continuously dechlorinating E-001 effluent. Compliance with the toxicity limitation may be demonstrated after adjusting the effluent pH through the addition of concentrated sulfuric acid to minimize the concentration of un-ionized ammonia. All tests shall be conducted in accordance with EPA protocols.
- (6) Sample date for bioassay and one for all other specified parameters shall coincide with composite sample(s).
- (7) If any effluent sample is in violation of limits, except those for metals, cyanide, and organics, sampling shall be increased for that parameter to at least daily or greater until compliance is demonstrated in two successive samples. Receiving water violations shall be reported in the monthly report; increased receiving water monitoring may be required. Compliance measurements represent compliance status for the time period between measurements.
- (8) These parameters shall be tested for on the same composite sample used for the bioassay.

- (9) These parameters shall be tested for in the effluent when the flow-through bioassay test is in progress.
- (10) Sampling shall be coordinated to be on the same date and approximate time as for the City of San Mateo and the South Bayside System Authority.
- (11) Chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, grab samples shall be taken every 30 minutes until compliance is achieved.
- (12) All flow other than to the outfall (e.g. sludge, etc.) shall also be reported monthly. Daily records shall be kept of the quantity (cu. yds. or cu. ft.) and solids content (%) of dewatered sludge disposed of and the location of disposal.
- (13) 5 samples per station at Stations C-1, 2, 3, CR-NW, and CR-SE only.
- (14) A minimum of four grab samples, one every six hours over a 24-hour period, must be used for volatile organic compounds (EPA Method 624), Cyanide and Phenolic Compounds. These samples shall be composited at the laboratory just prior to analysis.
- (15) The latest version of USEPA Methods 624, 625, 608 (or 8080) shall be used. The discharger shall attempt to achieve the lowest detection limits commercially available using this method.
- (16) The latest version of USEPA Method 1613 shall be used. The discharger shall attempt to achieve the lowest detection limits commercially available.

<u>Isomer Group</u>	<u>Quantification Limit</u>
2,3,7,8-tetra CDD	5 pg/l
2,3,7,8,-penta CDD	5 pg/l
2,3,7,8,-hexa CDDs	10 pg/l
2,3,7,8-hepta CDD	10 pg/l
octa CDD	25 pg/l
2,3,7,8-tetra CDF	5 pg/l
1,2,3,7,8-penta CDF	5 pg/l
2,3,4,7,8-penta CDF	5 pg/l
2,3,7,8-hexa CDFs	10 pg/l
2,3,7,8-hepta CDFs	10 pg/l
octa CDF	25 pg/l

If the analysis performed cannot achieve the qualification limits specified above, the discharger shall provide an explanation in its self-monitoring report. Another sample shall be analyzed if the reported quantification limits are significantly above the limits specified above.

- (17) The receiving water monitoring has been suspended for the duration of the Regional Monitoring Program (RMP). This suspension shall remain in effect for the duration of the RMP or until revoked by the Executive Officer.
- (18) The test organisms and frequency for chronic toxicity monitoring shall be determined by the Executive Officer.

TABLE 2
SELECTED LISTED POLLUTANTS LEVELS OF CONCERN (µg/l):

<u>Constituent</u>	<u>Monthly Average</u>	<u>Daily Average</u>
1,2 Dichlorobenzene	180000	Not Applicable (NA)
1,3, Dichlorobenzene	26000	NA
1,4 Dichlorobenzene	640	NA
2,4, Dichlorophenol	3	NA
2,4,6-Trichlorophenol	10	NA
4-Chloro-3-Methylphenol	30000	NA
Aldrin	0.0014	NA
A-BHC	0.13	NA
Benzene	210	NA
B-BHC	0.46	NA
Chlordane	0.0008	0.04
Chloroform	4800	NA
DDT	0.006	0.01
Dichloromethane	16000	NA
Dieldrin	0.001	0.02
Endosulfan	20	0.087
Endrin	8	0.023
Fluoranthene	420	NA
G-BHC (Lindane)	0.62	1.6
Halomethane	4800	NA
Heptachlor	0.0011	0.086
Heptachlor Epoxide	0.0007	NA
Hexachlorobenzene	0.007	NA
Pentachlorophenol	82	79
Toluene	3000000	NA
Toxaphene	0.007	0.002
Tributyltin	0.05	0.12